

TECHNICAL TERMS & DEFINITIONS

RFID TAG: The **RFID (Radio Frequency Identification)** tag is paper thin, wireless readable and writable. Tags can be used for both identification and the anti-theft of an item. RFID tags, consisting of an antenna and a memory chip which stores vital bibliographic data to identify each item.

STAFF STATION READER (SSR): provides circulation circuit reading capability in desktop design. The reader supports the check in/check out operations at the circulation desk.

TAG STATION: This station allows a very simple way to convert the collection from barcode to RFID to identify each item. The operation combines scanning of barcode, programming of the RFID tag and activation of the anti-theft in one single operation.

SHELF MANAGEMENT READER (SMR): This operation is at least 20 times faster than the inventory with barcode, even without closing the library. The process is just walk along the book shelves with the inventory reader to collect the data and do the inventory. The collected data is then automatically downloaded to the library database. Shelf management reader is now in process of development.

SELF CHECK OUT STATION (SCS): The station that allows patrons to check out library materials without interacting with library staff. The operation is possible to read both ID card and book simultaneously, that means, it is recording the ID, the borrowed items and deactivation the anti-theft. The station will not access borrower's account when the record is blocked due to fines, overdue books, or an expired card.

BOOK RETURN: A place to bring books borrowed from the library back to the library 24 hours. The book will automatically be checked in when they are returned through the slot, the book is instantaneously updated in the database.

SECURITY GATE (Theft detection): This is used to detect RFID tags that is equipped with EAS (Electronic Article Surveillance). The alarm will sound with flashing lights on the gate when detecting of armed RFID tags.

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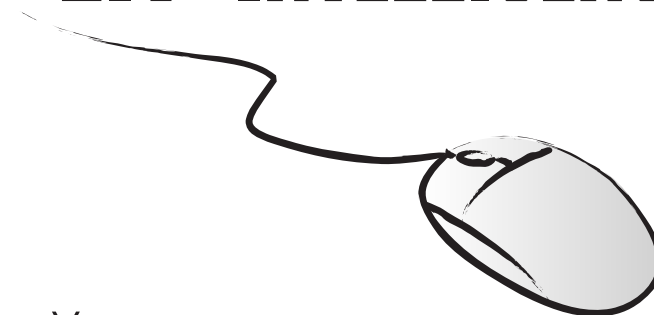
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LIT INTELLIGENCE



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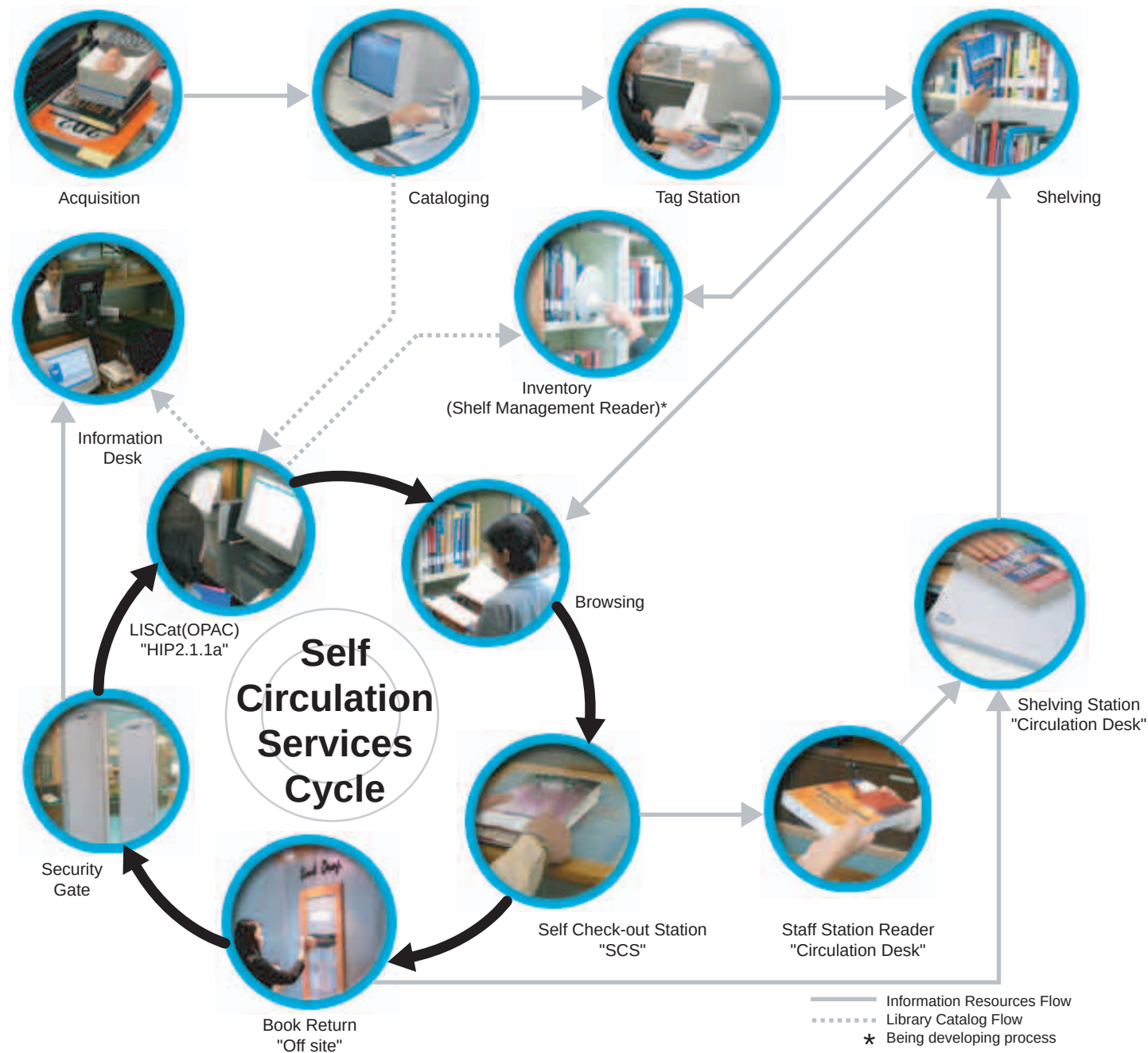
Shinawatra University
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LIT INTELLIGENCE

FIRST IN THAILAND
FIRST IN CLASS

OFFICE OF LIBRARY AND INFORMATION SERVICES



Introduction

The office of Library and Information Services, Shinawatra University is the first library in Thailand which has implemented RFID to automate the library operations. The system called LIT Intelligence has been in use since December 2002. RFID (Radio Frequency Identification) is used in LIT Intelligence primarily to automate the book handling processes including antitheft allowance, inventory maintenance, and circulation. LIT Intelligence improves the ergonomics of repetitive library tasks and lets information scientists have more time to spend advising patrons. It does a more frequent and accurate inventory to better manage collections. This enables the LIT to satisfy our patrons. Moreover, this proves that LIT is putting its "Digital Knowledge Focus" into practice.

Technical Specification

(for educational purposes only)

Tag Name	Folio™ 20 (for books)
Folio™ 20 CD (for CDs and DVDs)	Tag Size
	45 x 50 mm (1.7 x 1.96 inches) (for books)
	Ø 40 mm (0.16 inches) (for CDs and DVDs)
Chip Characteristics	13.56 MHz
	128 bits Memory
	Multitread
	Antitheft
Distance for Tag Detection	Up to 914 mm (36 inches) using a TAGSYS
Security Gates Size	EAS Pedestal
	56 x 5.3 x 163 cm. (Pedestal)
Security Gates	(L x W x H) 18 x 38 x 8 cm. (Controller)
	Weight 23 kg. (Pedestal)
Gate Components	2.2 kg. (Controller)
	- pedestal: plastic coverage (ABS-UL 94V0)
Pedestal Spacing	- 1 controller for each pedestal
	914 mm. between pedestals meets ADA
Gate Power Requirements	requirements
	100 - 250VAC to supply 12VAC 1A transformer
I/O Ports	(1 per pedestal)
	- 1 TTL level for standrd electronic counter
	- 2 open drain outputs which can be used for
	any additional
	security system: CCTV, locking gates, webcam, etc.
Staff Station Performance	
Number of Items Read	Up to 16 (depending on antenna configuration)
Reading Distance for 1 Item	19 cm (7.5 inches)
Writing Distance for 1 Item	15 cm (5.9 inches)
Library Reader L-L100	
Size (L x W x H)	310 x 260 x 80 mm
Weight	5 kg
RF Outputs and Power	2 RF outputs (up to 4W each) with multiplex
	capability and balanced 00/ 900/1800 operation
Power Supply	85 to 265 VAC / 50-60 Hz
Power Consumption	Up to 40 W
Communication Interface	Serial : RS232 / RS485 / RS422
	Parallel: bi-directional and enhanced (for test
	and debug)
Communication Speed	Serial: up to 38.4 Kbits/s
	Parallel: up to 200 Kbits/s
Input / Output	4 I/O ports independently configurable
Updateable Firmware (RF protocol management)	Yes
Application Software	512 Kbytes Flash Memory
Operating Temperature	0 to 55°C (32 to 131°F)
Storage Temperature	-20 to 70°C (-4 to 158°F)